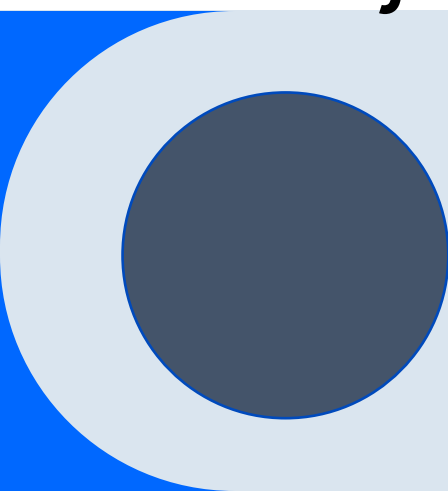# PADAS

Innovating Clinical Assessment Management: Simplifying Creation and Dissemination of Psychological Assessments

CSC 450 - Software Engineering, Fall 2023

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Developers: Eric Foreman, Rachel Keiter, Michael Totaro, Hannah Vuncannon

Purpose

PADAS stands for the **Psychological Assessment Distribution and Analysis System**.

- Our software application acts as a bridge which closes the gap between the way clinical assessments are created, distributed, and taken.

- The goal is to make customized psychological assessments more efficient to create, distribute, and access.

- PADAS breaks away from traditional paper-based assessment methods, offering a digital, customizable, and interactive experience.

Users

Assessment Builder

Traditional methods of assessment creation are often cumbersome, time-consuming, and lack flexibility.

- PADAS provides an intuitive user-friendly interface for creating custom tailored assessments.

- Enables assessment builders to craft tailored assessments that accurately measure patient needs and responses

Clinician

Obtaining and managing a wide array of custom assessments efficiently can be a troubling task.

- PADAS streamlines the distribution of assessments to clinicians.

- Clinicians can search from a library of custom-tailored assessments to easily assign, track, and administer assessments to patients.

Patients

Patients often find traditional assessment methods less interactive, leading to lower engagement and response accuracy.

- Our system offers an engaging and user-friendly interface for patients to complete assessments.

- Assessments contain various interaction types, making the overall process more accessible and engaging

Technologies Used

Front-End

- Vue.js
  - Vuetify
  - Vue Router
  - Pinia
- Vite
- Tailwind CSS
- Axios
  - HTTP client for API requests

Back-End

- Flask
  - Lightweight Python Micro web framework
- SQLAlchemy
  - ORM for Python
  - Access and manage SQL database using Python
- Marshmallow
  - Serializing/Deserializing objects
- Pytest & Coverage
- Zappa
  - Serverless python deployment automation/Config. tool

Database

- PostgreSQL
  - RDBMS, chosen for its ability to store and query raw JSON objects and relational nature of our data

System Architecture (Serverless Web Application)
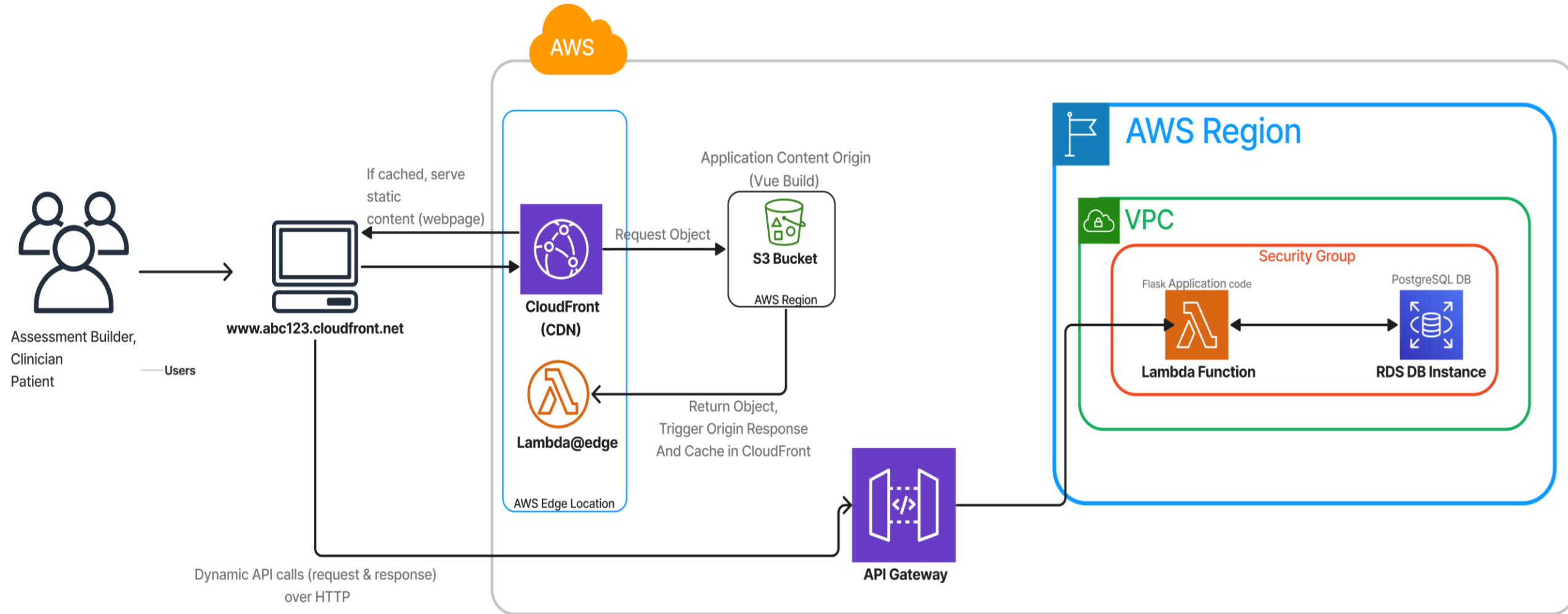
Demonstration

PADAS

Technical Challenge

System Design/Integrating Diverse Technologies

- This challenge was not just about of using new technologies, but effectively combining them to create a cohesive and maintanable system.

- Designing the system to ensure seamless communication and efficient data flow between components.

- ETC: Easier-to-Change
  o Don't trade off flexiblity to for short-term solutions
  o Need to adapt based on implementation discoveries

Message to Prior Selves

Get universal UI elements set early on so that things are developed with these already implemented

- Have a good foundation and plan on coding in the long-term and not just the short-term.

Don't slack on learning new material for the project!

- Make sure to dedicate enough time to properly learning any new systems, formats, languages etc., you will need to for your project if you know you will be using new ones!'

- Get a head start and don't shy away from delving into documentation and tutorials early on

Embrace Felxiblity and Continuous learning

- The diversity of technologies and application architecture will require you to adapt and learn rapidly.
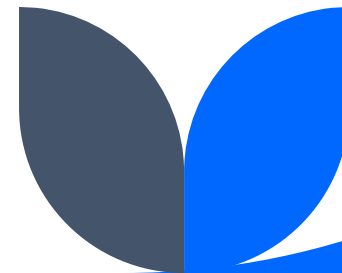
Questions?
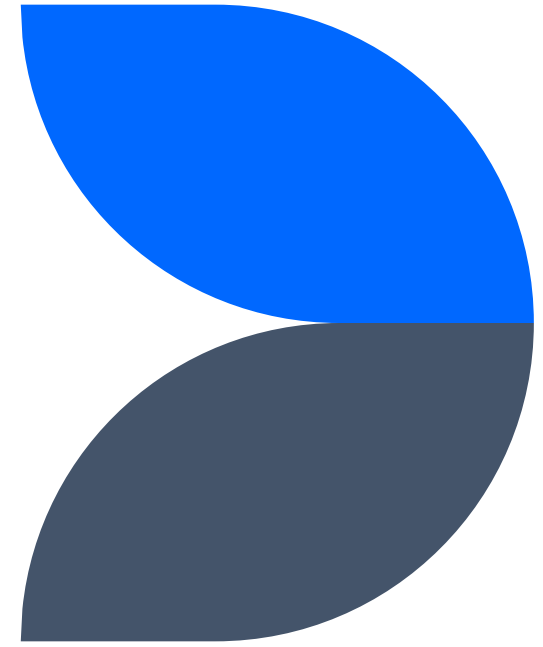
Splash Page
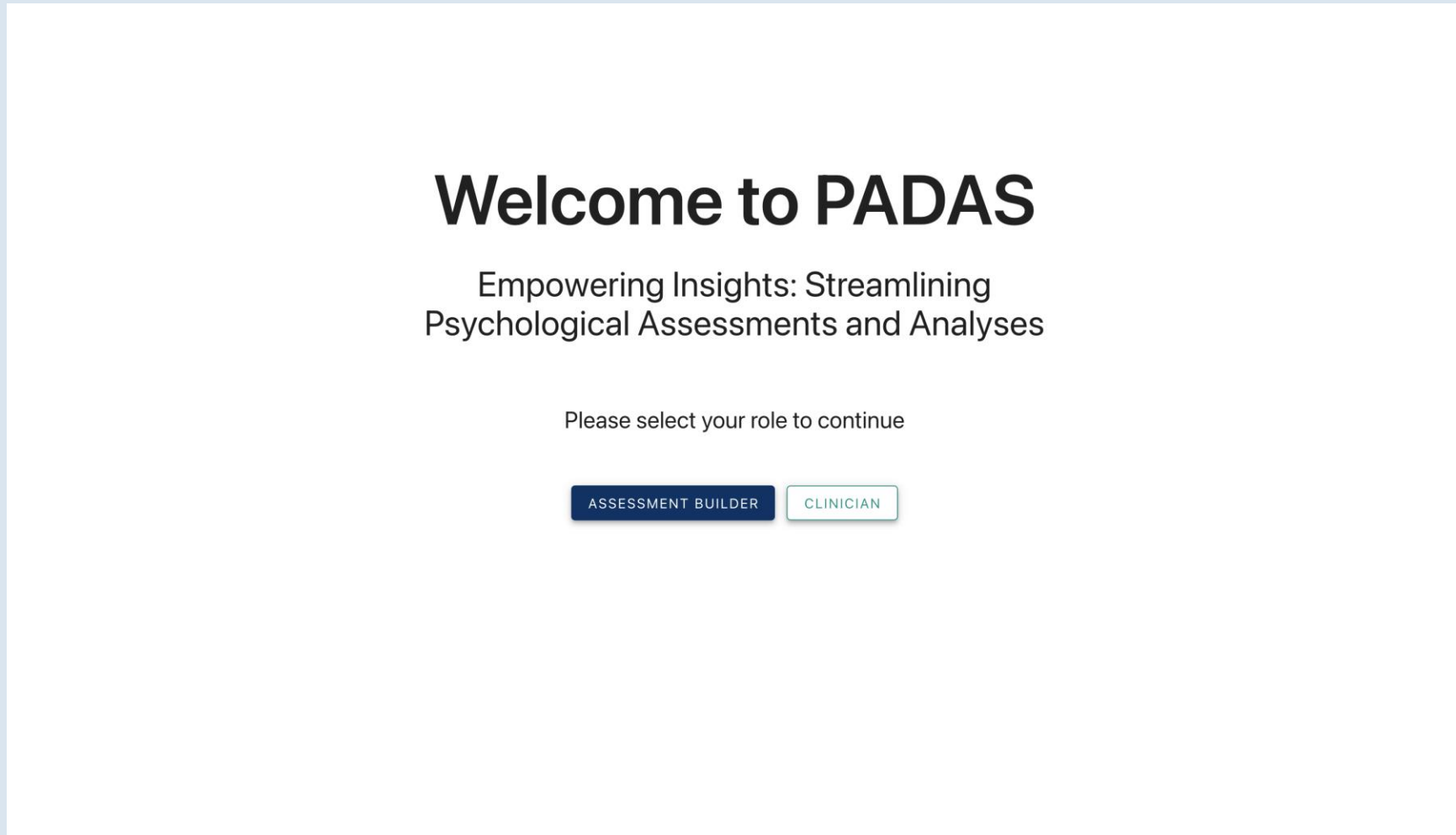
Splash Homepage where either the Assessment Builder or Clinicians can log in

User(s): Assessment Builder and Clinicians

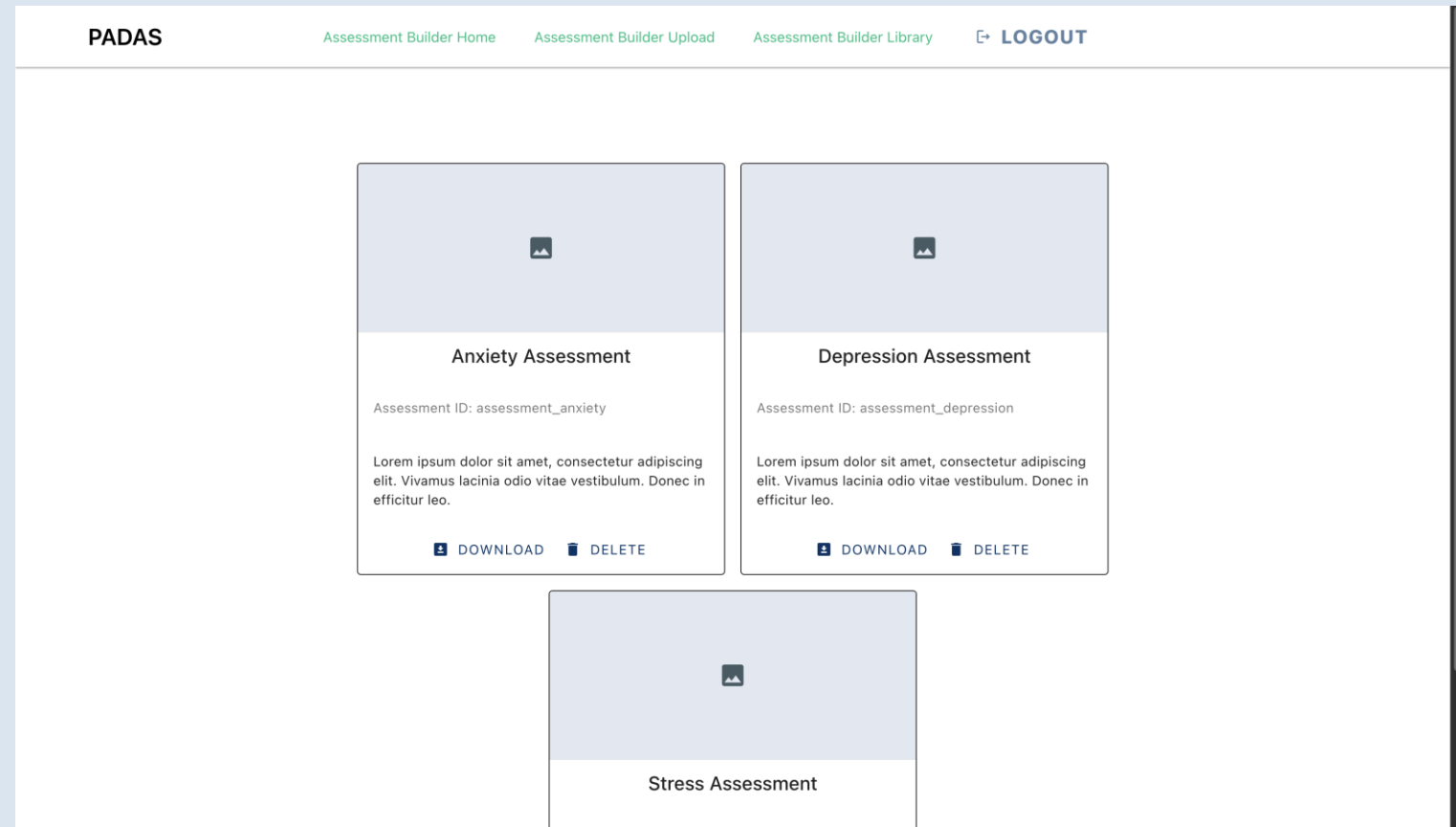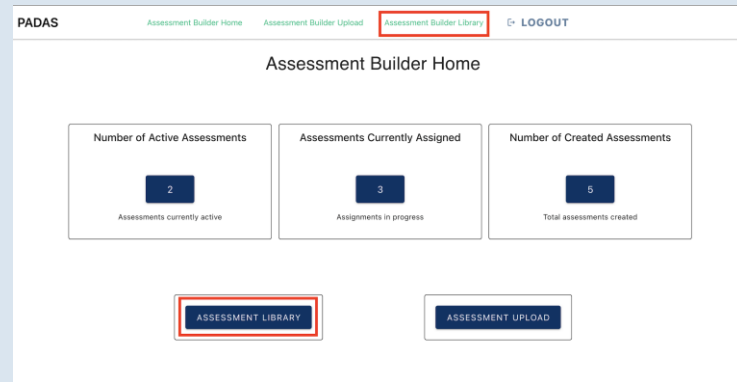# Assessment Builder Home

After logging in as an Assessment builder, user gets taken to the Assessment Homepage. From here, they can go to "Assessment Library" or "Assessment Upload".
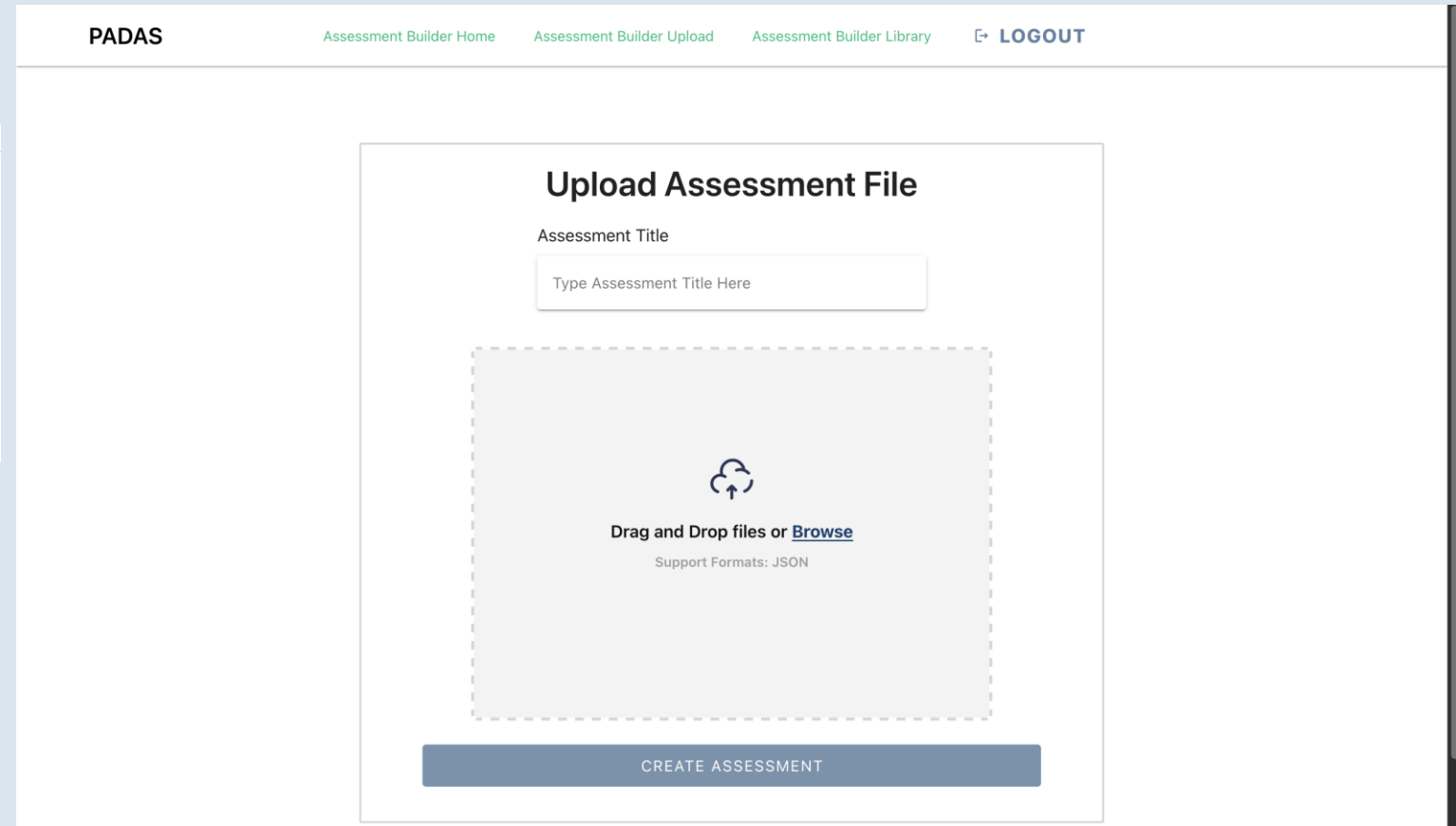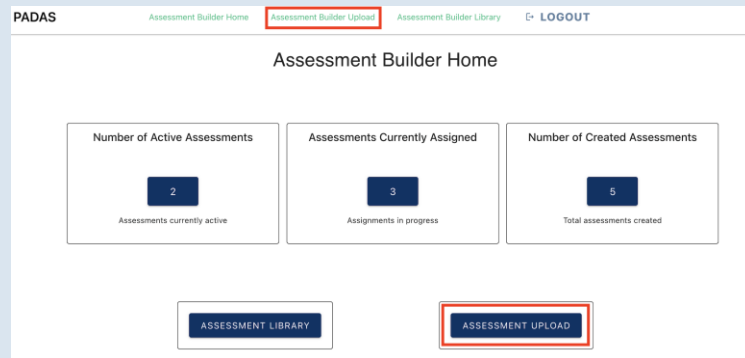
User(s): Assessment Builder

Assessment Builder Library

Here the user can view assessments that have already been uploaded. From here, the user can download the JSON file for a specific assessment or delete assessments.

User(s): Assessment Builder

Assessment Builder Upload

This is where the user can upload custom assessments. The user uploads a JSON file outlining how the assessment will render.

User(s): Assessment Builder

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Assessment Upload Demo

When the user drag/drops or selects a valid file, the "Create Assessment" button is highlighted. The user then must name the assessment before adding it to the library.

User(s): Assessment Builder

Logout

The user can click the "Logout" button in the top right of the nav bar to return to the splash homepage.

User(s): Assessment Builder and Clinicians

Clinician Login

Welcome to PADAS

Empowering Insights: Streamlining
Psychological Assessments and Analyses

Please select your role to continue

ASSESSMENT BUILDER   CLINICIAN

Welcome to PADAS

Empowering Insights: Streamlining

Clinician Selection

Please select your ClinicianID or name from the dropdown below

Select your Clinician Credentials

CLOSE   LOGIN

When logging in as a Clinician, the user logs in using their credentials. These credentials are represented in a dropdown menu.

User(s): Clinicians

Clinician Homepage

After logging in as a Clinician, user gets taken to the Clinician Homepage. From here, they can go to "Assign Assessment" or "Take Assessment".

User(s): Clinicians

Assign Assessment: Patient

Here the user can assign an assessment to a patient. The user can search for the patient by search bar or by dropdown menu containing all their patients. "Select" confirms patient selection and moves on. "Cancel" returns to the clinician homepage.

User(s): Clinicians

Assign Assessment: Assessment

After selecting a patient, the user can then move on to selecting the assessment they want to assign. The user can search via search bar or dropdown menu. "Select" moves on to confirm selections. "Back" returns to the patient selection/search.

User(s): Clinicians

Assign Assessment: Confirmation

After selecting an assessment, the user is taken to a confirmation page to confirm the assignment. "Assign" will assign the selected assessment to the selected patient. "Back" will take the user back to the Assessment Selection.

User(s): Clinicians

Take Assessment: View
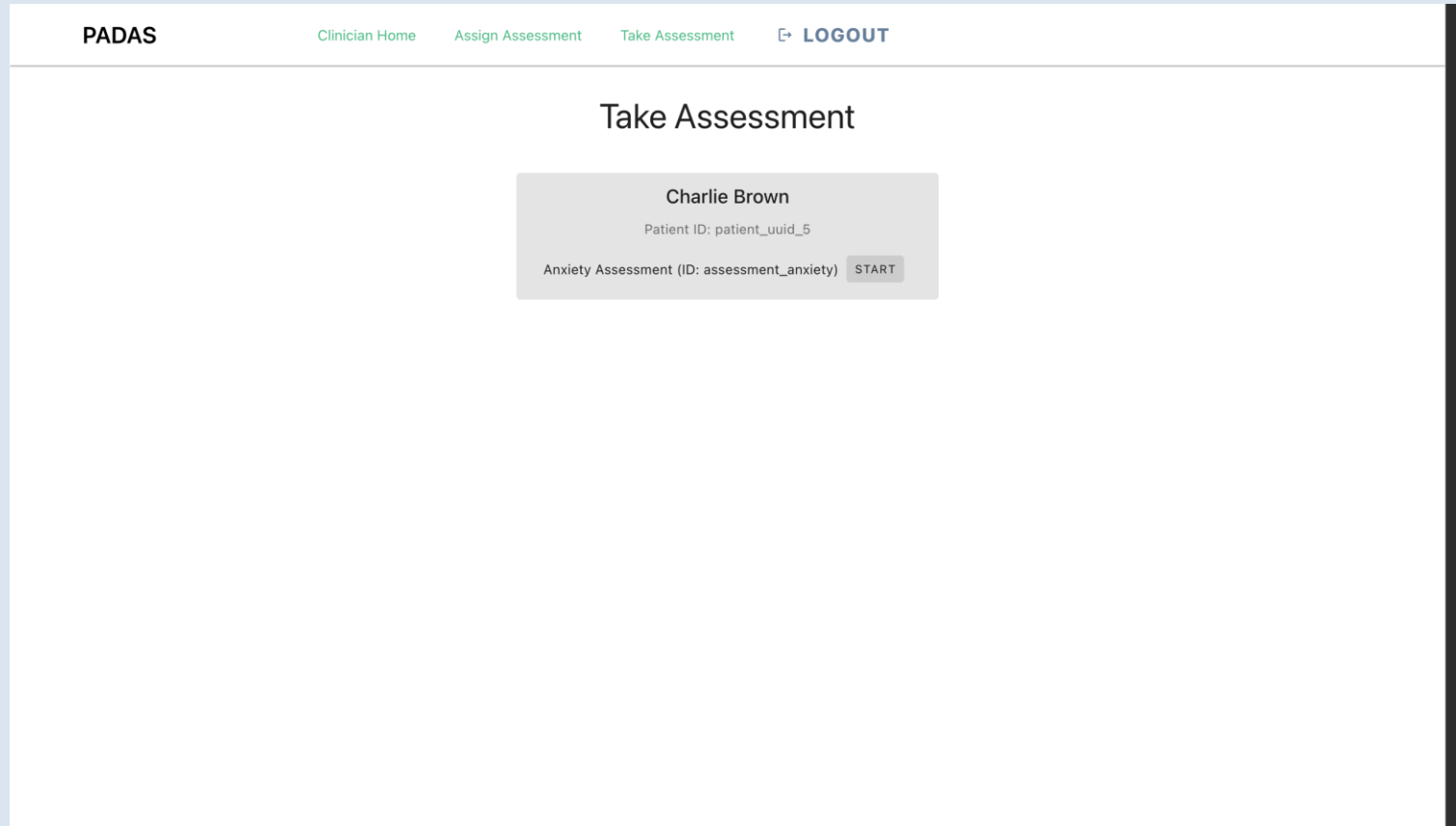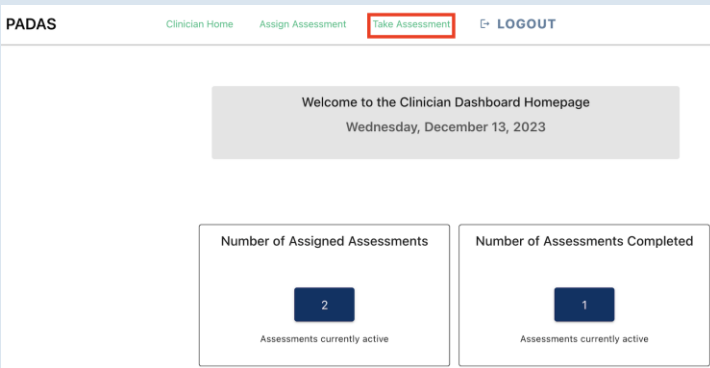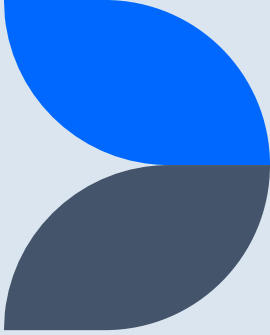
Here the user can view what assessments are assigned to what patient. From here, the user can select "Start" next to an assigned assessment to render it, and hand the device over to the patient for them to begin the assessment.

User(s): Clinicians

Take Assessment: Assessment

The patient begins taking the survey one question at a time after being handed the device by their clinician.

User(s): Patients

Take Assessment: Question examples

Dipole Slider Frame

If you were to rank your feelings of anxiety from 1 to 10, where 1 is "I don't feel anxiety on a daily basis" and 10 is "I feel anxiety almost every day," what is the strongest/highest your experience has been? What is the weakest/lowest your experience has been

Please adjust the 2 dots on the slider to the relevant positions based on the prompt above.
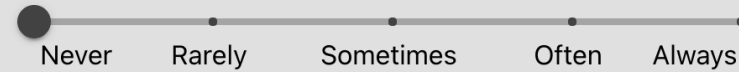
1   2   3   4   5   6   7   8   9   10
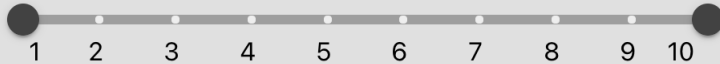
NEXT

Slider Frame

In the past SEVEN (7) DAYS, I felt anxious (Never, Rarely, Sometimes, Often, Always)

Please adjust the dot on the slider to the relevant position based on the prompt above.

Never   Rarely   Sometimes   Often   Always

NEXT

Multiple Choice Response Frame

Does anyone at home suffer from a serious health problem?

Please select your best response to the prompt above.

○ No

○ Yes

○ Don't know

NEXT

The patient can have different types of questions in their assessment: Dipole Slider, Slider, Multiple choice, Checkboxes, Textbox, Image Selection, Response Button. Pictured above is three examples from the Anxiety Assessment.

User(s): Patients

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Take Assessment: Completion

Please describe, in as much detail as you feel comfortable, a situation that makes you feel anxious:

Please enter you response in the box below.

> Type your response here

SUBMIT

Assessment completed successfully, please wait for your clinician to review your results ✕

Take Assessment

Charlie Brown

Patient ID: patient_uuid_5

Anxiety Assessment (ID: assessment_anxiety) START

The last question in the assessment ends with "Submit". Once this is clicked, the assessment is completed, and the device is handed back to the clinician.

User(s): Patients then Clinicians